



# Technical Customer Advisory Committee

## AGENDA

*Amended 2/1/16*

### *Members*

David Brookshire	Mike Hightower
Cassandra D'Antonio	Elaine Hebard
Amy Ewing	Laura McCarthy
Laurie Firor	Ege Richardson

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<b>Thursday, February 4, 2016</b>	<b>4:00 PM</b>	<b>ABCGC – 7th Floor Conference Room 7096</b>
1. Call to Order – Note presence of quorum		4:00-4:05
2. Approval of Agenda		4:00-4:05
3. Approval of January 7, 2016 Action Summary		4:00-4:05
4. Election of Chair and Vice-Chair		4:05-4:10
5. February Public Information Meetings		4:05-4:10
6. Water Supply Projections		4:10-5:00
7. Groundwater Reserve Management Policy		5:00-5:45
8. Public Comment		5:45-5:55
9. Final Comments or Questions		5:55-6:00
10. Adjournment		6:00

NOTICE TO PERSONS WITH DISABILITIES: If you have a disability and require special assistance to participate in this meeting, please contact the Water Utility Authority Office, Suite 5012, Albuquerque/Bernalillo County Government Center, phone 768-2500 or by the TTY 1-800-659-8331, as soon as possible prior to the meeting date.



# Technical Customer Advisory Committee

## ACTION SUMMARY

January 7, 2016

Members Present:

David Brookshire  
Amy Ewing  
Laurie Firor  
Mike Hightower  
Elaine Hebard  
Ege Richardson

Members Excused:

Cassandra D'Antonio  
Laura McCarthy

Water Authority Staff Present:

Mark Sanchez, Executive Director  
Frank Roth, Senior Policy Manager  
Charles Kolberg, General Counsel  
John Stomp, Chief Operations Officer  
Katherine Yuhas, Water Conservation Officer  
Rick Shean, Water Quality Hydrologist  
Andrew Lieuwen, Water Rights Manager

Consultants Present:

David Jordan, INTERA Inc.  
Greg Gates, CH2M

Others Present:

Jim Steele, CDM  
Norm Gaume

### Item 1 – Committee Open Discussion

Committee members provided their written comments on Agenda Item #6 and asked questions of staff or consultants.

### Item 2 – Call to Order - Note presence of quorum

The meeting was called to order at 4:15 pm by Chair Amy Ewing.

### Item 3 – Approval of Agenda

Mike Hightower made a motion to approve the agenda. Laurie Firor seconded the motion. The motion passed on a 5-0 vote.

For: 5      Ewing, Firor, Hebard, Hightower, Richardson  
Against: 0  
Excused: 3      Brookshire, D'Antonio, McCarthy

**Item 4 – Approval of November 5, 2015 Action Summary**

Mike Hightower made a motion to approve the action summary. Laurie Firor seconded the motion. The motion passed on a 5-0 vote.

For: 5 Ewing, Firor, Hebard, Hightower, Richardson  
Against: 0  
Excused: 3 Brookshire, D’Antonio, McCarthy

**Item 5 – Approval of Open Meetings Resolution**

Laurie Firor made a motion to approve the resolution. Mike Hightower seconded the motion. The motion passed on a 5-0 vote.

For: 5 Ewing, Firor, Hebard, Hightower, Richardson  
Against: 0  
Excused: 3 Brookshire, D’Antonio, McCarthy

*David Brookshire entered at this part of the meeting.*

**Item 6 – Demand Projections**

Committee members provided comments on the Water Demand Chapter for the Water Resources Management Strategy update. Members discussed recommended changes to the chapter text and figures.

**Item 7 – Alternatives and Scenario Development**

David Jordan reviewed the key areas achieved by the TCAC in 2015 for the alternatives and scenario development. He provided an example alternative on brackish groundwater. He also discussed the components of the Groundwater Management Policy. The TCAC will be reviewing the Water Supply Chapter and Groundwater Reserve Management Policy for the February meeting.

**Item 8 – Public Comment**

Norm Gaume provided comments.

**Item 9 – Final Comments and Questions**

Staff responded to committee comments and questions.

**Item 10 – Adjournment**

The meeting concluded at 6:05 pm.

# Albuquerque's Water Future: Preparing Now for Tomorrow

## Information Sessions on Development of the Next **WATER RESOURCES MANAGEMENT STRATEGY**

Planning for development of the Water Authority's next 10-year Water Resources Management Strategy is under way. Attend one of these public information sessions to learn more about the process and the science that's driving it.

**6:30 p.m. – 7:30 p.m. (doors open at 6:00)**

### WEDNESDAY, FEBRUARY 10



**Ladera Golf Course  
Banquet Hall**  
3401 Ladera Drive NW  
Albuquerque, NM 87120

### THURSDAY, FEBRUARY 11



**North Domingo Baca  
Multigenerational Center**  
7521 Carmel Ave NE  
Albuquerque, NM 87113

To request Americans With Disabilities Act (ADA)-Related accommodations for either session, contact Jason Edwards at (505) 245-3133 or [jasone@cwastrategic.com](mailto:jasone@cwastrategic.com) at least two days before the session.

More information: [www.abcwua.org](http://www.abcwua.org)

# **Water Resources Management Strategy 2017 Update**

**ABCWUA TCAC February 4, 2016**

## **Today's Meeting**

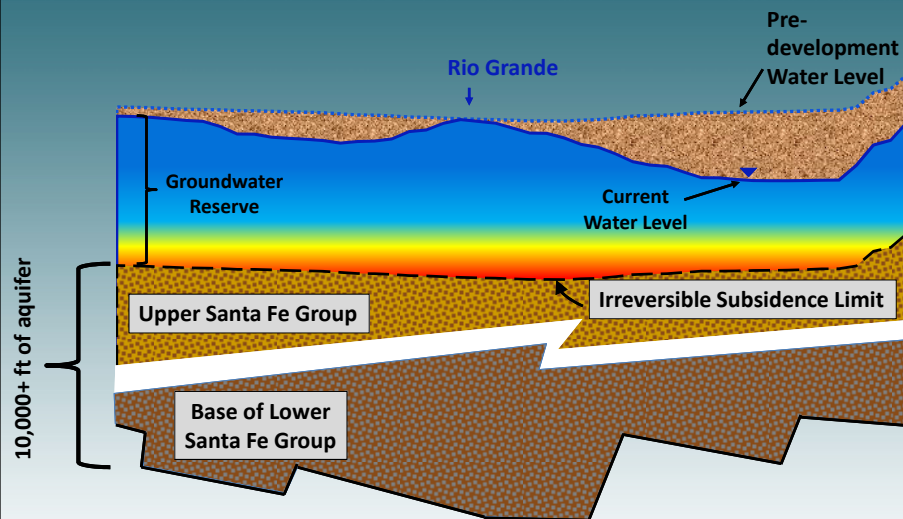
- 1. Supply White Paper**
- 2. Groundwater Reserve Management Plan**

# 2007 WRMS

## Policy C. “Establish and Maintain a Groundwater Drought Reserve”

- Maintain sufficient water in the aquifer to provide water supply during a prolonged drought.
- Water levels in the aquifer maintained so that pumping the drought reserve will not cause adverse irreversible impacts to the aquifer.

# Current Conditions

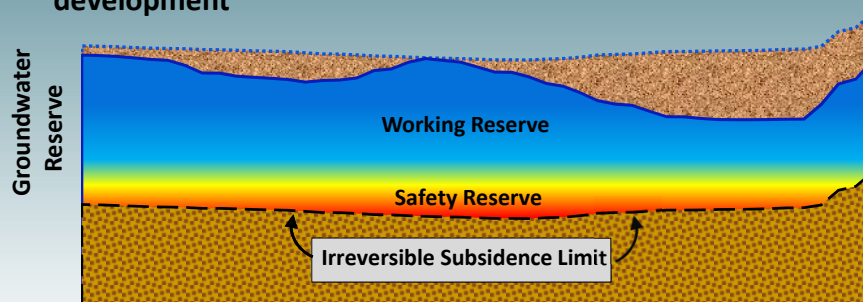


# Proposed 2017 Groundwater Management Policy

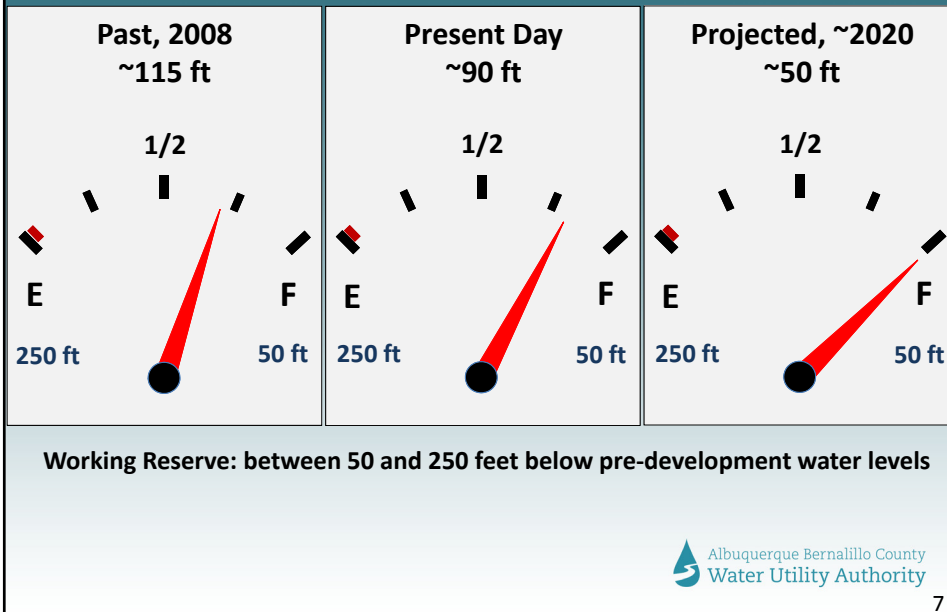
- Partition the aquifer into three zones
  1. Below subsidence threshold: no pumping
  2. Safety Reserve: pumping only in emergency
  3. Working Reserve: pump with restoration plan
- Seek new supplies whenever future drawdown is anticipated to fall below a set management level

# Definition of the Reserves

- Level of irreversible subsidence: 300 feet below pre-development
- Safety Reserve: between 250 and 300 feet below pre-development
- Working Reserve: between 50 and 250 feet below pre-development



## Working Reserve Gauge



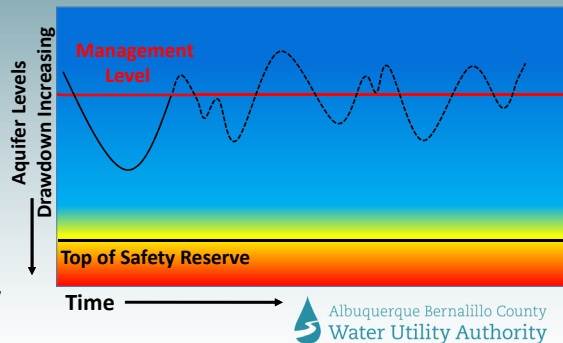
## Groundwater Reserve Management Level – 110 feet of Drawdown

- **Why this level works:**
  - We have been below this level and come back so we know this level is feasible
  - Aquifer levels are expected to rise for about 10 years, so 110-foot level is conservative
  - With existing rights, allows substantial use of groundwater in perpetuity while managing to this level
  - Leaves storage in the Working Reserve untapped for the 100-year planning horizon and beyond



## Management of Working Reserve: In Practice

- Allows anticipation of need for new supply
- New supply may come in various quantities:
  - Drawdown will drop below management level while putting new supply in place
  - Water levels will rise above management level due to size of project
  - Use groundwater management, then modify if necessary



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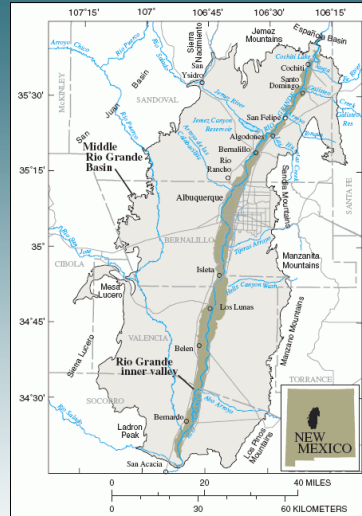
## Detailed Technical Support: Water Balance Approach

- The following slides summarize technical support for the water balance:
  - How the aquifer works
  - What are offset requirements?
  - How can we ensure ability to meet offsets in the future?

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## Groundwater: Background

- **Inflow to Basin**
  - ~90,000 afy mountain-front
  - Seepage in from Rio Grande
- **Discharge out of Basin**
  - Groundwater discharge to the Rio Grande
  - Evapotranspiration from riparian vegetation
- **Prior to development, recharge and discharge were balanced**



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## What happened when groundwater pumping started?

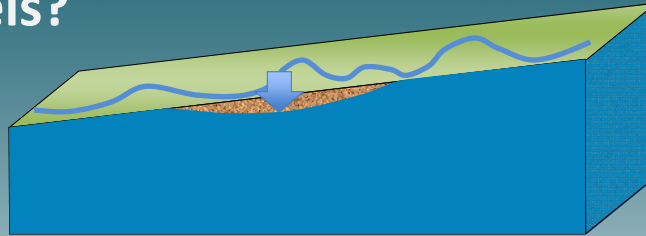
- Wells in the basin intercept recharge that would have flowed to the Rio Grande
- Water levels decline as water is removed from storage, inducing inflow from the Rio Grande
- These two combined are the “river effect”
  - The Water Authority is required to offset their entire effect
  - The river is always “kept whole” downstream of Albuquerque

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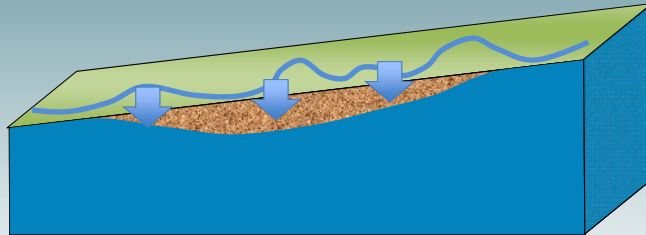
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# How does river effect change with water levels?

Shallower Levels /  
Less Pumping =  
Less Effect



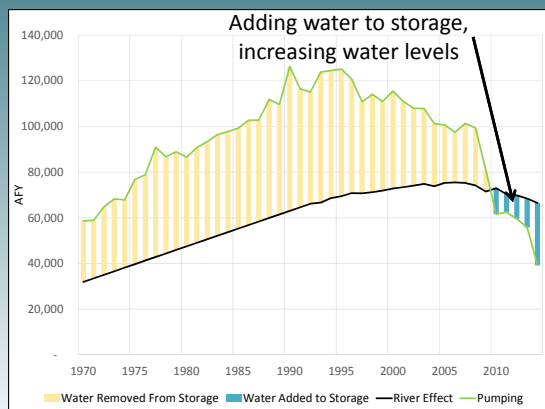
Deeper Levels /  
More Pumping =  
More Effect



- As wells are pumped, water is removed from storage (drawdown), and partially replaced by water from the river

# The Authority's effect on the aquifer

- Through 1990's
  - Pumping increasing
  - River effect increasing (lag time)
- 1990's – 2000's
  - Pumping decreasing
  - River effect "catches up"
- Since 2007 WRMS
  - River effect exceeds pumping



## What can be used to offset river effects?

- Rio Grande surface water rights
- Treated wastewater return flows
  - Increasing with demand
  - Other obligations
    - Drinking Water Project offsets
    - Reuse
- San Juan-Chama

## Balancing offsets and pumping, assuming DWP is in operation

- Water available for offsets
  - ~26,000 afy Rio Grande surface water rights
  - Return flows from DWP in excess of DWP offsets
  - Return flows ~60 percent of groundwater pumped
    - If groundwater use were about 75,000 afy, then about 45,000 afy of return flows would be available for offset
- Total available for offset ~75,000 afy with average ~75,000 afy of groundwater use
  - Annual pumping can be substantially greater than 75,000
  - Could meet offset requirements if river effect “caught up” with pumping
  - Equates to drawdown of about 110 feet

## Conclusions: Important GRMP Characteristics

- Is founded on the best available science
- Is based on the system water balance as administered by the Office of the State Engineer
- Is consistent with recent Authority experience, which has demonstrated that aquifer management can result in rising water levels (aquifer replenishment)
- Enables action decision points regarding new supply that are clearly defined and objective
- Can be applied in perpetuity
- Can serve as a model to other groundwater users in the Albuquerque Basin and elsewhere

